-continued

Val	Trp	Ile	Gly	Leu	His	Asp	Pro	Lys	Asn	Asn	Arg	Arg	Trp	His	Trp	
			100					105					110			
Ser	Ser	Gly	Ser	Leu	Phe	Leu	Tyr	Lys	Ser	Trp	Asp	Thr	Gly	Tyr	Pro	
		115					120					125				
Asn	Asn	Ser	Asn	Arg	Gly	Tyr	Cys	Val	Ser	Val	Thr	Ser	Asn	Ser	Gly	
	130					135					140					
Tyr	Lys	Lys	Trp	Arg	Asp	Asn	Ser	Cys	Asp	Ala	Gln	Leu	Ser	Phe	Val	
145					150					155					160	
Cys	Lys	Phe	Lys	Ala												
				165												

We claim:

1. An isolated DNA molecule encoding a mammalian islet cell neogenesis associated protein (INGAP) protein, wherein the INGAP protein has the amino acid sequence shown in SEQ ID NO: 2.

2. The DNA molecule of claim 1 wherein the INGAP protein has the nucleotide sequence shown in SEQ ID NO: 1.

3. A vector comprising the DNA of claim 1.

4. The vector of claim 3 further comprising expression control sequences, whereby said DNA is expressed in a host cell.

5. The vector of claim 4 which comprises a EBNA His plasmid.

6. A host cell transformed with the DNA of claim 1.

7. A host cell transformed with the vector of claim 3.

8. The host cell of claim 6 which is a cos7, African Green Monkey kidney cell.

9. A nucleotide probe comprising at least 30 contiguous nucleotides of a sequence encoding a mammalian islet cell neogenesis associated protein (INGAP), wherein said protein has the sequence shown in SEQ ID NO: 2.

10. The nucleotide probe of claim 9 wherein the mammalian INGAP gene has the sequence shown in SEQ ID NO: 1.

11. The nucleotide probe of claim 9 wherein said probe is labeled with a detectable moiety.

12. A DNA molecule comprising at least 30 contiguous nucleotides of a sequence encoding a mammalian islet cell neogenesis associated protein (INGAP), wherein said protein has the sequence shown in SEQ ID NO: 2.

13. The DNA molecule of claim 12 wherein the mammalian INGAP gene has the sequence shown in SEQ ID NO: 1.

14. The DNA molecule of claim 12 wherein said molecule is labeled with a detectable moiety.

15. A method of producing a mammalian INGAP protein, comprising the steps of:

providing a host cell according to claim 6;

culturing the host cell in a nutrient medium so that the INGAP protein is expressed; and

harvesting the INGAP protein from the host cells or the nutrient medium.

16. A method of producing a mammalian INGAP protein, comprising the steps of:

providing a host cell comprising the DNA molecule of claim 1;

culturing the host cell in a nutrient medium so that the mammalian INGAP protein is expressed; and

harvesting the mammalian INGAP protein from the host cells or the nutrient medium.

17. An antisense construct of a mammalian islet cell neogenesis associated protein (INGAP) gene comprising:

promoter, a terminator, and a nucleotide sequence consisting of a mammalian INGAP gene, wherein the gene encodes a protein as shown in SEQ ID NO: 2, said nucleotide sequence being between said promoter and said terminator, said nucleotide sequence being inverted with respect to said promoter, whereby upon expression from said promoter an mRNA complementary to native mammalian INGAP mRNA is produced.

18. The DNA molecule of claim 1 wherein the INGAP protein is from human.

19. The DNA molecule of claim 1 which comprises nucleotides 4 to 268 and 389 to 629 of SEQ ID NO: 1.

* * * * *